

CLAIMS

What is claimed is:

1. An integrated circuit including a metal fill pattern comprising:
 - 5 a first plurality of metal traces electrically connected to a power supply pad; and
 - a second plurality of metal traces electrically connected to a ground pad;wherein said second plurality of metal traces are
10 interdigitated between said first plurality of metal traces to form a purposeful inter-metal capacitance therebetween.
2. The integrated circuit including a metal fill pattern according to claim 1, wherein:
15 said first plurality of metal traces and said second plurality of metal traces further function as a purposeful shield to minimize electromagnetic radiation from affecting circuitry therebelow.
3. The integrated circuit including a metal fill pattern
20 according to claim 2, wherein:
said circuitry therebelow includes an analog circuit.
4. The integrated circuit including a metal fill pattern according to claim 1, further comprising:
25 a first plurality of traces crossing each of said first plurality of metal traces; and
a second plurality of traces crossing each of said second plurality of metal traces.

5. The integrated circuit including a metal fill pattern according to claim 4, wherein:

said first plurality of traces each form a perpendicular angle with respect to an electrically connected one of said first plurality of metal traces.

6. The integrated circuit including a metal fill pattern according to claim 5, wherein:

said second plurality of traces each form a perpendicular angle with respect to an electrically connected one of said second plurality of metal traces.

7. The integrated circuit including a metal fill pattern according to claim 5, wherein:

a portion of said first plurality of metal traces connected to a number of said first plurality of traces forms a straight line.

8. The integrated circuit including a metal fill pattern according to claim 5, wherein:

a portion of said first plurality of metal traces connected to a number of said first plurality of traces forms a curving line.

9. The integrated circuit including a metal fill pattern according to claim 7, wherein:

another portion of said first plurality of metal traces connected to others of said first plurality of traces forms a curving line.

10. The integrated circuit including a metal fill pattern according to claim 1, wherein:

said metal fill pattern forms a coverage density of at least 50%.

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11. The integrated circuit including a metal fill pattern according to claim 1, wherein:

said first plurality of metal traces and said second plurality of metal traces are linear.

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12. The integrated circuit including a metal fill pattern according to claim 11, wherein:

said first plurality of metal traces and said second plurality of linear metal traces run along a generally straight line.

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13. A method of forming a cross-fill metal fill pattern in an integrated circuit that provides a plurality of purposeful functions, comprising:

forming a first plurality of parallel traces electrically connected;

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forming a second plurality of parallel traces electrically connected;

electrically routing said first plurality of parallel traces to a common power rail in said integrated circuit; and

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electrically routing said second plurality of parallel traces to a common ground rail in said integrated circuit;

wherein said cross-fill metal pattern provides metal fill as a first purposeful function, and as a second purposeful function provides at least one of capacitance across a power supply, and electro-magnetic shielding to protect an analog circuit therebelow.

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14. The method of forming a metal fill pattern in an integrated circuit that provides a plurality of purposeful functions according to claim 13, further comprising:

5 forming interdigitated fingers physically connected to at least one of said first plurality of parallel traces; and

forming interdigitated fingers physically connected to at least one of said second plurality of parallel traces.

15 10 15 14. The method of forming a metal fill pattern in an integrated circuit that provides a plurality of purposeful functions according to claim 13, wherein:

said cross-fill metal pattern achieves three purposeful functions of (1) providing metal fill, (2) provides decoupling capacitance across a power supply when powering said integrated circuit, and (3) provides an electro-magnetic shield to protect an analog circuit therebelow.

16. Apparatus for forming a cross-fill metal fill pattern in an integrated circuit that provides a plurality of purposeful functions, comprising:

means for forming a first plurality of parallel traces electrically connected;

means for forming a second plurality of parallel traces electrically connected;

means for electrically routing said first plurality of parallel traces to a common power rail in said integrated circuit; and

means for electrically routing said second plurality of parallel traces to a common ground rail in said integrated circuit;

wherein said cross-fill metal pattern provides metal fill as a first purposeful function, and as a second purposeful function provides at least one of capacitance across a power supply, and electro-magnetic shielding to protect an analog circuit therebelow.

17. The apparatus for forming a metal fill pattern in an integrated circuit that provides a plurality of purposeful functions according to claim 16, further comprising:

means for forming interdigitated fingers physically connected to at least one of said first plurality of parallel traces; and

means for forming interdigitated fingers physically connected to at least one of said second plurality of parallel traces.

18. The method of forming a metal fill pattern in an integrated circuit that provides a plurality of purposeful functions according to claim 16, wherein:

5 said cross-fill metal pattern achieves three purposeful functions of (1) providing metal fill, (2) provides decoupling capacitance across a power supply when powering said integrated circuit, and (3) provides an electro-magnetic shield to protect an analog circuit therebelow.

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